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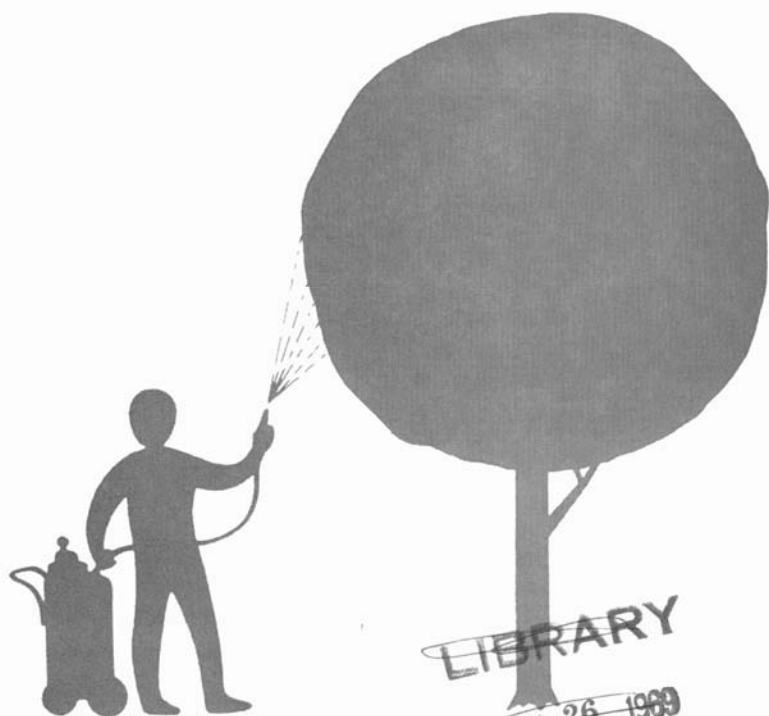
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HOME ORCHARD PEST CONTROL



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PEST CONTROL PROGRAMS for cherries, apples, crab apples, pears, quinces, peaches, nectarines, apricots, and plums are given in this circular. Pests that affect these fruit trees include various insects and other animals as well as plant diseases. The culture and pest control of grapes, brambles, strawberries, currants, gooseberries, and blueberries are discussed in Circular 935, "Growing Small Fruits in the Home Garden," available from your extension adviser or from the Office of Publications, College of Agriculture, Urbana, Illinois 61801.

Spraying Tips

Good spray coverage is essential for adequate pest control. Thoroughly wet the undersides of the leaves, the fruit, the limbs, and the trunk, as well as the upper sides of the leaves. Insect and disease control is most difficult in the upper portions of the tree. Therefore direct two-thirds of the spray into the top half of the tree. Spray until the tree begins to drip.

If the leaves or fruit are waxy and the spray stays in drops instead of spreading over the surface, add one teaspoon of liquid household detergent per gallon of spray after filling sprayer.

Don't skip sprays — insects and diseases do not take vacations.

Cultural Tips

Prune fruit trees each year to keep them short and well shaped. Well-pruned trees are easier to spray.

Keep the grass under and around trees mowed. Grass harbors mites, aphids, and other insects affecting fruit trees.

During the spray season, pick up and destroy or bury any fallen fruit damaged by insects or diseases. In the fall, rake up all fallen leaves and fruit. Then burn, compost, or bury them.

Tank Mix and Multipurpose Mix

Using a ready-to-use multipurpose spray mix is sometimes more convenient than mixing separate materials in the tank. The initial investment is considerably less than buying separate materials, but over a period of years the cost usually is greater for three reasons. First, the cost per pound of material usually is greater. Second, not all of the ingredients in the multipurpose spray are needed for some applications. And third, for the stone fruits (peaches, plums, cherries, etc.) less costly materials are often just as effective. Mixing the separate chemicals also allows variations in the mixture to suit the conditions and the plant being sprayed.

Most spray chemicals will retain their effectiveness for 3 or 4 years if stored in a dry place. Malathion has a disagreeable odor. Store it in a closed metal container.

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CAPT
Approximate Amount of Spray Required
for Fruit Trees of Different Sizes

| Height in feet | Spread in feet | Gallons per tree per application ^a |
|----------------|----------------|---|
| 4 | 3 | up to ½ |
| 5 to 8 | 3 to 6 | ½ to 1 |
| 8 to 10 | 4 to 8 | 1 to 2 |
| 10 to 15 | 8 to 15 | 2 to 6 |
| 15 to 20 | 15 to 25 | 5 to 10 |

^a The larger figures are suggested for trees in full foliage.

Measuring and Mixing Spray Materials

The amounts given in the spray schedules are in level tablespoons and level cups or partial cups. One level cup equals 16 level tablespoons. The suggested amounts are adequate for control. Excessive concentration of spray materials may cause injury to the foliage and fruit.

Spray powders are preferred over liquid concentrates because liquid concentrates are more likely to cause injury to leaves and fruit.

Spray powders must be thoroughly dispersed in water or they will clog the spray nozzle. One method of mixing sprays in compressed-air and other types of sprayers without agitators is as follows. Measure the spray powders and place them in the tank. Then use a hose to fill the sprayer. Use pressure from the stream of water (a nozzle is handy) to

Spray Schedule for Cherries

| Mix No. | Time to apply | Spray material | For 1 gal. | For 10 gal. | Remarks |
|---------|--|--|---------------|--------------|---|
| | | | <i>tbsp.</i> | <i>cups</i> | |
| 1 | When husks begin to split and pull away from the base of the fruit | Captan, 50% Malathion, 50% Methoxychlor, 50% | 1½ 1½ 2 | 1 1 1½ | |
| | | OR Multipurpose fruit spray | | | |
| 2 | 7 to 10 days after No. 1 mix | Same as No. 1 mix | | | |
| 3 | Just after fruit is harvested and again 2 to 3 weeks later | Captan, 50% | 2 | 1½ | Important to control leaf spot and to keep leaves from dropping prematurely |

NOTE: For special borer sprays for cherries see the schedule for peaches. Diodine (Cyprex) gives outstanding control of cherry leaf spot and is recommended as a replacement for captan in the spray program above if it is available.

thoroughly mix as the tank is filled. Shake the tank frequently while spraying to keep the materials dispersed.

Another method of mixing sprays is to measure the spray powders into a small can or jar, add a small amount of water, and stir into a smooth, thin slurry. Wash the slurry into the spray tank and fill to the desired level.

For power sprayers with an agitator, fill the tank one-third full of

Spray Schedule for Apples, Crab Apples, Pears, and Quinces

| Mix No. | Time to apply | Spray material | For 1 gal. | For 10 gal. | Remarks |
|---------|---|--|---------------------|-------------------|--|
| | | | <i>tbsp.</i> | <i>cups</i> | |
| 1 | Dormant; <i>before</i> buds swell, <i>not later</i> | Plant spray oil | 6 | 4 | Spray only when the temperature will not go below 33° F. for 24 hours |
| 2 | When fruit buds show color (or turn pink) | Captan, 50% Zineb, 75% Lead arsenate Malathion, 25% | 1½ 1½ 2 1½ | 1 1 1¼ 1 | |
| | | OR Multipurpose fruit spray | | | |
| 3 | When three-fourths of the petals have fallen | Same as No. 2 mix | | | |
| 4 | 7 to 10 days after No. 3 mix | Same as No. 2 mix | | | |
| 5 | Continue sprays at 7- to 10-day intervals until July 1 | Captan, 50% Zineb, 75% Malathion, 25% Methoxychlor, 50% OR Multipurpose fruit spray | 1½ 1½ 1½ 2 | 1 1 1 1½ | For better mite control, add dicofol (Kelthane), 1 tablespoon to 1 gallon or ⅔ cup to 10 gallons |
| 6 | Continue sprays at 10- to 14-day intervals until 2 weeks before harvest | Same as No. 5 mix | | | May need dicofol for mite control |

NOTE: Fire blight, a serious disease of these pome fruits, causes a sudden wilting, dying, and scorching of the flowers, leaves, and new shoot growth. Three sprays of streptomycin a week apart give good protection if applied alone at a dosage of 75 to 100 parts per million starting when 5 to 10 percent of the blossoms are open. Streptomycin is most effective when applied at night or under very humid conditions. For additional information, see Report on Plant Diseases 801, "Fire Blight of Apple and Pear."

water, start the engine and the agitator, sift in the spray powders, and then finish filling the sprayer.

If liquid materials are included, mix the spray powders first and add the required amount of water before adding the liquid spray material. Prepare a fresh spray mix for each application.

Spray Schedule for Peaches, Nectarines, Apricots, and Plums

| Mix No. | Time to apply | Spray material | For 1 gal. | For 10 gal. | Remarks |
|--------------------------|---|-------------------|--------------|-------------|---|
| | | | <i>tbsp.</i> | <i>cups</i> | |
| 1 | Dormant; <i>before</i> buds swell, <i>not later</i> | Captan, 50% | 1½ | 1 | This is the only spray that controls leaf curl and plum pockets |
| 2 | When fruit buds show color (or turn pink) | Captan, 50% | 2 | 1⅓ | Do not use insecticides or multi-purpose spray during bloom or pollinating insects will be killed |
| 3 | During bloom | Captan, 50% | 2 | 1⅛ | Very important for brown rot control |
| 4 | When husks begin to split and pull away from the base of the fruit | Wettable sulfur | 3 | 2 | Sulfur is needed for scab control on peaches; sulfur may be added to a multipurpose fruit spray |
| | | Captan, 50% | 1 | ⅔ | |
| | | Methoxychlor, 50% | 2 | 1½ | |
| | | Malathion, 25% | 1½ | 1 | |
| OR | | | | | |
| Multipurpose fruit spray | | | | | |
| 5 | 7 to 10 days after No. 4 mix | Same as No. 4 mix | | | |
| 6 | Continue sprays at 10- to 14-day intervals until 3 weeks before harvest | Same as No. 4 mix | | | |
| 7 | 10 to 14 days after No. 6 mix | Malathion, 25% | 1½ | 1 | Within 1 week of harvest spray captan alone for brown rot |
| | | Captan, 50% | 2 | 1½ | |

NOTE: Special borer sprays for peaches, nectarines, cherries, plums, and apricots: Spray or paint the trunk and lower limbs *only* with 2 tablespoons carbaryl (Sevin) per gallon of water about June 15, July 15, and August 15. Keep spray off leaves and fruit.

Preventing Mouse Damage

Mice are serious pests of apple trees and frequently of other fruit trees. They eat bark from the main roots and the trunk near and below the ground line. Mouse injury can occur at any time, but it is usually most serious in the fall and winter months.

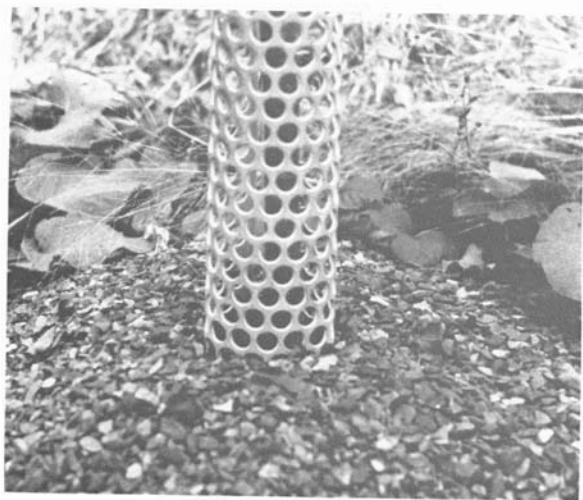
Natural predators such as cats, hawks, owls, and foxes will greatly reduce the mouse population if protective cover is eliminated. Mow the grass closely under the trees and throughout the orchard. Hoe out all grass and weeds within 1 foot of the trunk leaving the ground bare.

A gravel collar around the tree trunk discourages mice and helps control grass and weeds. The collar should be 6 to 8 inches deep and about 2 feet in diameter (see picture). The gravel must remain loose to prevent damage to the trunk.

Preventing Rabbit Damage

During the winter months when food is scarce rabbits eat the bark from the trunk and lower limbs of young fruit trees. Rabbits seldom bother mature trees. A circular metal guard 18 inches tall and 8 to 12 inches in diameter made of hardware cloth or similar materials placed around the trunk will protect it from rabbits. However, if deep snows crust, rabbits may be able to stand on the snow and eat above the guard.

Ready-mixed chemical repellents containing either Thiram or ZAC are available in stores handling garden and pest-control supplies. One application sprayed or painted on the lower trunk and branches in the fall usually gives protection all winter.



Young apple tree with a metal guard and a gravel collar.

Preventing Bird Damage

Birds are especially destructive pests of cherries and they frequently damage other fruits. Covering the trees with netting just prior to fruit ripening is the only practical method of protecting the fruit from birds. Some sources of protective netting are given below. There are undoubtedly other firms that manufacture equally good netting.

Animal Repellents, Inc., P.O. Box 168, Griffin, Georgia 30223.

Bemis Bros. Co., 2400 S. 2nd Street, St. Louis, Missouri 63104.

Chicopee Manufacturing Corp., Lumite Division, Cornelia, Georgia 30531.

Moodus Net & Twine, Moodus, Connecticut 06469.

Nichols Net & Twine, Route 3, Bend Rd., East St. Louis, Illinois 62201.

Other Publications

Other publications of interest to home fruit gardeners are listed below. County extension advisers' offices may have these publications on hand or you may order them from the sources indicated.

Available from the Office of Publications, College of Agriculture, Urbana, Illinois 61801.

Circular 871. Training Spur-Bearing Delicious Apple Varieties.

Circular 935. Growing Small Fruits in the Home Garden.

Circular 998. Tree Fruit and Nut Varieties for Illinois Home Orchards.

Available from the Section of Economic Entomology, State Natural History Survey, Urbana, Illinois 61801.

NHE 98. Coddling Moth.

NHE 99. Oriental Fruit Moth.

NHE 100. Scale Insects.

NHE 101. Plum Curculio.

NHE 108. Apple Maggot.

NHE 112. Peach Tree Borer.

NHE 126. Fruit Insects. (A colored picture sheet for sale for 5 cents.)

Available from the Department of Plant Pathology, College of Agriculture, Urbana, Illinois 61801, are the following Reports on Plant Diseases.

No. 800. Cherry Leaf Spot.

No. 801. Fire Blight of Apple and Pear.

No. 802. Cedar Apple Rust.

No. 803. Apple Scab.

No. 804. Brown Rot of Stone Fruits.

No. 805. Peach Leaf Curl.

No. 806. Perennial Canker of Peaches.

No. 807. Manganese Toxicity in Peach and Apple Trees.

Available from the Department of Horticulture, College of Agriculture, Urbana, Illinois 61801.

Hort FR 9. Pruning Peach Trees.

Hort FR 18. Home Fruit Trees — Fertilization and Related Practices.

HANDLE PESTICIDES CAREFULLY

All pesticides should be handled with care. The materials suggested in this circular are relatively low in toxicity, but careless use can cause illness.

- Read the label and follow all precautions and directions.
- Keep pesticides locked up and away from children and pets.
- Avoid getting spray materials and spray on the skin. If an accident happens, wash the area with soap and water IMMEDIATELY.
- Mix sprays in a well-ventilated area to avoid breathing spray dust and fumes.
- Wear a cap, a long-sleeved shirt, and full-length pants when spraying to protect the skin from spray drift.
- Don't smoke while spraying or handling spray chemicals.
- Don't spray from the inside of the tree.
- Wash hands and face with soap and water when spraying is finished.
- Avoid spray drift on vegetables, small fruits, bird baths, fish ponds, and water supplies of animals.

This circular was prepared by M. C. Shurtleff, Professor of Plant Pathology, Roscoe Randell, Instructor in Entomology Extension, and D. B. Meador, Extension Specialist in Horticulture.

Urbana, Illinois

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